

## How CEOs and TMTs build adaptive capacity in small entrepreneurial firms

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## How CEOs and TMTs Build Adaptive Capacity in Small Entrepreneurial Firms

### ABSTRACT

Research suggests that a CEO may have more influence in the context of small entrepreneurial firms, but it is still unclear how a company's chief executive facilitates strategic decision-making. Little is known about the ways in which these individuals build strategic capabilities, such as the capacity to adapt to changing environments. This study addresses these issues and develops a model indicating that transformational leadership facilitates behavioral integration and comprehensiveness in the decision process among members of the top management team (TMT), which in turn enhances organizational capacity to adapt to environmental changes. Survey results shed light on the complex way in which CEOs facilitate processes within the TMT and enhance small entrepreneurial firms' capacity to adapt, thereby increasing their viability. This study contributes to the literatures on Upper Echelon Theory, strategic decision-making, and dynamic capabilities by shedding light on the ways in which transformational leaders influence behavioral and decision-making processes.

**Key Words:** Behavioral integration; adaptability; Comprehensiveness; Small entrepreneurial firms; Transformational leadership; Top management teams.

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### **Running Head: Adaptive Capacity in Small Firms**

Small entrepreneurial firms are often depicted as proactive and agile (Irvine and Anderson, 2004; Golann, 2006; Pisano, 2006; Katila et al., 2012). However, evidence indicates that they are in fact highly fragile organizational entities that often fail to survive beyond three years (US Small Business Administration (SBA), 2006; UK Department for Business, Enterprise and Regulatory Reform (BERR), 2008; The European Commission (EC), 2013; Australian Bureau of Statistics (ABS), 2001). The literature (*cf.* Rosenbusch et al., 2011) generally cites the liability of newness (Stinchcombe, 1965) or the lack of formal routines (Bruderl and Schussler, 1990; Sine et al., 2006) associated with these enterprises, although some studies have pointed to the capacity of small organizations to build greater resilience through smallness (Carmeli and Markman, 2011). However, it remains unclear why some small entrepreneurial firms develop a greater capacity to adapt to changing environments than others.

We theorize that strategic decision-making processes comprise a key mechanism underpinning the capacity of small entrepreneurial firms to adapt to their competitive environments. CEOs and other executives vary in their personality, values and attitudes and thus may also exhibit different orientations and behaviors that may lead to variation in firm-level outcomes (Markman and Baron, 2003). Leadership scholars suggest that the leadership of CEOs of small entrepreneurial firms is likely to have a substantial influence on their functioning. In the absence of resources and formal routines, CEOs act as a resource platform providing experiences, skills, abilities that the firms can rely on (see Lubatkin et al., 2006). Put differently, small firms that have a relatively limited hierarchical structure and resource pool are likely to rely more extensively on a limited set of assets (mainly their executives and employees),

processes and mechanisms (Golann, 2006; Katila and Shane, 2005) in the decision-making process.

Strategic decisions are defined as decisions that are substantial, unusual and all-pervasive (Hickson et al., 1986) since they require the TMT to commit considerable organizational resources (Mintzberg et al., 1976). Furthermore, strategic decisions often have emotional, financial, environmental and ethical implications that can “critically affect organizational health and survival” (Eisenhardt and Zbaracki, 1992, p. 17; see also Hambrick, 2007). Research has shown that the strategic decision-making processes of effective TMTs differ considerably from those of less effective ones (Eisenhardt, 1999). Although there has been enormous interest in strategy and management (e.g., Hart, 1992; Quinn, 1980), the scholarly focus on processes that “serve to transform executive characteristics into strategic action” is relatively underdeveloped (Hambrick, 2007, p. 337), and scholars have encouraged a Behavioral Theory lens (Kunc and Morecroft, 2010) to identify how CEOs and TMTs utilize inherent behavioral factors to manage cognitive processes (Carter, 1971; Cyert and March, 1992; Gavetti, 2012). The Behavioral Theory of the Firm (Cyert and March, 1992) argues that while small firms may operate under the guidance of the entrepreneur, larger firms include coalitions of individuals or groups that participate in setting goals and making decisions. Nevertheless, the issue of how CEOs facilitate strategic decision-making processes in TMTs (Carmeli et al., 2012), influence organizational processes (Garcia-Morales et al., 2008) and help to build adaptability (Nadkarni and Herrmann, 2010) remains elusive. Hambrick (1994) noted that a focus on TMT behavioral integration (BI), which refers to the extent to which a TMT is engaged in a mutual and collaborative interaction (Hambrick, 1994), may explain adaptive and maladaptive organizational responses to changing environments (Hambrick, 1998), but this line of research still needs further theoretical

development and empirical evidence (Simsek et al., 2005; Hambrick, 2007), particularly in the context of small entrepreneurial firms (Johnson et al., 2003; Lubatkin et al., 2006).

Here, we develop and test a serial mediation model, shown in Figure 1, which elaborates on the complex ways in which CEOs shape and facilitate behavioral and cognitive processes. The findings indicate that transformational CEOs help their firms to become more adaptive to environmental jolts by developing behaviorally-integrated TMTs in which members engage in strategic decision comprehensiveness (which is indicative of the inclusiveness of decision makers in the process of making and integrating strategic decisions). This research endeavor informs strategic leadership theory by unraveling the role of CEOs in facilitating TMT interactions and strategic decision comprehensiveness (Finkelstein, Hambrick and Cannella, 2009). It further helps explain why these TMT processes are conducive to building strategic capabilities (Caridi-Zahavi et al., 2015) and more specifically the adaptive capacity of small entrepreneurial firms.

----Insert Figure 1 about here----

## **THEORETICAL BACKGROUND**

### **CEO Transformational leadership and TMT Behavioral Integration**

Transformational leaders are perceived by followers as exhibiting a style of leadership that marks idealized influence, motivational inspiration, intellectual stimulation, and individual consideration that helps them to grow and achieve higher performance (Bass, 1985). Such leadership is considered to exert substantial direct as well as indirect influences on organizational performance (Yukl, 1999). However, strategic leadership scholars have noted differences in the nature of work and level of responsibility between CEOs and other executives (Hambrick and

Mason, 1984). This has led to more intense study of the direct interface between CEO leadership and TMT processes (Garcia-Morales et al., 2008; Ling et al., 2008).

To capture the processes TMTs engage in and enable a better understanding of how their members interact, Hambrick (1994) sought to overcome disparate efforts of small group research that examined a variety of concepts, including communication (Smith et al., 1994), collaboration (Chatman & Flynn, 2001), social interaction (Chatman, Polzer, Barsade, & Neale, 1998), and social integration (O'Reilly et al., 1989). He developed the concept of *behavioral integration* (BI), and considered it a meta-construct that describes TMT engagement and the quality of task- and social-related dynamics or processes within the team (Li and Hambrick, 2005). BI is a highly positive and desired team trait that reflects the TMT's level of mutual and collaborative interaction and captures 'teamness' or effective processes within a TMT that allow members to better manage complex strategic and organizational issues (Hambrick, 1994; 2007). Evidence from both qualitative and quantitative studies indicates that TMT BI drives outcomes such as organizational ambidexterity (e.g., Lubatkin et al., 2006), realistic strategic decisions (e.g., Carmeli and Schaubroeck, 2006), and improved performance (e.g., Hambrick, 1998; Li & Hambrick, 2005; Lubatkin et al., 2006).

Scholars have also underscored the importance of investigating the role of transformational CEOs in shaping and facilitating processes in TMTs of small firms (Ling et al., 2008) since these organizations lack resources and formalization. Small entrepreneurial firms often rely more heavily on the leadership of the CEO and the TMT in subsequent decision-making processes than larger, more mature, organizations (Lubatkin et al., 2006).

We posit that transformational leadership fosters TMT BI by promoting both social connections and the corresponding task-related processes among top managers. Research

indicates that transformational leaders facilitate social connections by augmenting collective satisfaction (Trice and Beyer, 1993). They motivate followers to cooperate with others, engage in more intensive exchanges, and contribute more effort that benefit their teams (Shamir et al., 1993). Transformational leaders tend to pay individualized attention to employees, which helps trigger valuable positive change in such individuals (Bass, 1999; Bass and Avolio, 2000). This, in turn, helps to inspire collective actions, develop strong communication channels, and instill trust in the organization (see Judge and Piccolo, 2004; Wang et al., 2011). By challenging followers to view problems from various perspectives (Bass, 1985; Sosik, 1997) and highlighting the importance of collective cooperation on collective tasks (Jung et al., 2003), transformational CEOs facilitate task-related processes in the TMT. Transformational CEOs are known to demonstrate charisma, articulate an inspirational vision, encourage intellectual stimulation, and exhibit individualized consideration in their interactions with followers (Bass, 1999; Bass and Avolio, 2000). This helps them to bolster communication within their TMTs (Ling et al., 2008) and increase the quality and quantity of the information exchanged. The influence of a transformational leader is likely to be even more significant in smaller firms (see Lubatkin et al., 2006), especially because they are more likely to play both strategic and operational roles and they have day-to-day contact with most (if not all) of the organization's executives and employees.

Thus, a CEO exhibiting transformational leadership should positively influence the extent to which the TMT engages in mutual collaborative interaction (i.e., BI) through solid communication networks, and in so doing is likely to impact the decision-making process of the TMT. Thus:

*Hypothesis 1: CEO transformational leadership is positively associated with TMT behavioral integration.*

### **CEO Transformational Leadership, TMT Behavioral Integration, and Strategic Decision Comprehensiveness**

Strategic decision comprehensiveness (SDC), which is defined as “the extent to which firms attempt to be exhaustive or inclusive in making and integrating strategic decisions” (Fredrickson and Mitchell, 1984, p. 402) has been linked to organizational processes, attributes and outcomes. For example, SDC can elevate corporate entrepreneurship (Heavey et al., 2009) and increase organizational performance (Forbes, 2007). SDC is enacted when decision-makers opt from among multiple alternatives while considering various criteria in evaluating alternatives (Forbes, 2007; Fredrickson and Mitchell, 1984), including financial, cultural, ethical, legal and environmental factors. Nutt (2004) pointed out that most strategic decisions are made without allocating sufficient resources to exploring alternatives, and that executives generally give serious consideration to only one viable option, thus failing to engage in a comprehensive strategic decision-making process.

Researchers have indicated that collaborative and open group work are crucial to coping with complex and ill-structured decisions (Kerr and Tindale, 2004). Effective decision-makers tend to use more information, emphasize interactions with other TMT members, favor collaboration over competitiveness, and generally rely on more extensive information than ineffective decision-makers (Eisenhardt, 1999). Thus, high TMT BI (manifested in increased collaboration and information-sharing among TMT members) is likely to encourage the search and exploration of alternative solutions as well as increased openness to the views and perspectives of other TMT members. Finally, joint decision-making, which is another vital facet



of BI, ensures decision-making completeness (Ling et al., 2008). In joint decision-making processes, team collaboration and information-sharing are facilitated and reinforced. This may lead to a process that is more comprehensive and conducive to the sharing of opinions, the exploration of potential responses to strategic situations, and the utilization of cooperative decision-making procedures to better react to the competitive environment faced by the organization.

We also posit an additional, indirect, mediated relationship between CEO transformational leadership and SDC, through BI. This is because transformational leadership promotes a positive developmental change among followers by exhibiting leadership behaviors (such as individual consideration) that help them to satisfy the need for achievement and growth (Bass, 1999; Bass and Avolio, 2000). However, transformational leaders also shape team-level processes by creating a supportive environment (Eisenbeiss, van Knippenberg, and Boerner, 2008) and emphasizing collective interests that motivate members to act on behalf of the team as a whole (Bass and Riggio, 2006). Research indicates that transformational leadership helps to shape a work environment characterized by good communication, a spirit of trust, sharing of knowledge, and collaboration (Senge, 1990; Slater and Naver, 1995). Further, transformational leaders encourage members to converse openly, participate in the strategic decision-making process, and engage in implementing the choices of the team. CEO transformational leadership can indirectly influence TMT members' involvement in the strategic decision-making process by facilitating mutual and collective interactions while also encouraging direct engagement in the decision-making process through a more consensual approach (Flood, Hannan, Smith, Turner, West, and Dawson, 2000) that allows the team to overcome the potential trap of limited scope and depth of information search (Nutt, 2002). CEOs who exhibit transformational leadership

behaviors are likely to induce this participatory decision-making process through their accrued influence in small-sized entrepreneurial firms because of the low number of executives on the team as well as the more informal and less bureaucratic structure. Thus,

*Hypothesis 2a: There is a positive relationship between CEO Transformational leadership and strategic decision comprehensiveness.*

*Hypothesis 2b: There is a positive relationship between TMT behavioral integration and strategic decision comprehensiveness.*

*Hypothesis 2c: There is a direct and indirect relationship (through TMT behavioral integration) between CEO Transformational leadership and strategic decision comprehensiveness.*

### **Organizational Capacity to Adapt**

A key question in the field of strategy and management is how firms build capacities to adapt to environmental turbulence. Firms are known to vary in their level of adaptability. In a "Darwinian" economic environment, firms that do not adapt are likely to perish (Beer, 2003), while adaptive organizations endure. The organizational capacity to adapt (or strategic adaptability) refers to a firm's ability to adjust and respond to dynamics and turbulence in its respective industry (Carmeli and Sheaffer, 2008). This definition encompasses the organization's willingness to change its strategy and operative actions when needed, as well as adapt its working processes to market changes. Strategic capability allows firms to ensure viability. This adaptive capacity is also a facet of resilience, which enables an organization to rebound from experiences of failure and adversity strengthened, more resourceful (Sutcliffe and Vogus, 2003), and may be crucial to organizational longevity (e.g. Carmeli and Markman, 2011).

## **The Mediating Role of TMT Behavioral Integration and Strategic Decision**

### **Comprehensiveness**

A number of micro-behavioral mechanisms underpin this strategic capability and impact the mediating role of TMT BI and SDC (Carmeli et al., 2013; Hollnagel et al., 2006). Early work by Fredrickson and Mitchell (1984) conceptualized SDC as a processual mechanism that represents the level of inclusiveness involved in making and integrating strategic decisions. A TMT which is comprehensive in the decision-making process is expected to search extensively for alternative courses of action and devote ample consideration to different criteria before deciding on a course of action. A behaviorally integrated TMT is more capable of synchronizing its social and task processes due to its improved information exchange, collaborative behavior and joint decision- making (Hambrick, 1994; Simsek et al., 2005). Thus BI is likely to facilitate SDC which, in turn, can help the organizational system become more vigilant and alert to informational cues in the environment and respond more effectively.

Hambrick (1998) argued that a firm's ability to adjust is enhanced by behavioral integration. He reported that behavioral integration enabled TMTs to integrate knowledge and insights as well as create core competencies and react well to increasing market needs. Lubatkin et al. (2006) indicated that the extent to which a TMT in a small- to medium-sized firm (SME) is behaviorally integrated is positively associated with an ambidextrous orientation where a firm is capable of jointly pursuing both an exploitative and an exploratory orientation, thus gaining flexibility and a superior ability to change. BI is likely to be an enabling mechanism that underpins the organizational capacity to adapt, but it also seems likely that a TMT needs a well-designed decision process so that its responses to environmental conditions and subsequent changes will be effective. By engaging in collaborative interactions TMT members are likely to

become more environmentally aware, but the nature of SDC allows for effective adaptation to emerging market demands, since an non-comprehensive decision process may result in the development of an inadequate response to emerging issues whether opportunities or threats. Studies have noted the importance of comprehensiveness in allowing for better adaptability and improved performance (Fredrickson, 1984; Fredrickson and Mitchell, 1984). For example, a boutique construction firm in our sample faced an important decision when required to renovate a big hotel. Its executives collaborated well and implemented effective decision making processes, which led to mindfulness as regards environmental implications. They finally decided to do the work in stages and acquire expensive equipment that minimized environmental fallout (such as dust and debris). Not only was the firm able to pass a random check by the Ministry of Health, but also enhanced its capacity to adapt to emerging needs and successfully complete the project on time. This is also consistent with Snizek's (1992) argument that a TMT engaged in SDC has a better grasp of complex issues emerging from the competitive environment and make more realistic assessments of the challenges they face, reinforce organizational adaptability to explore additional alternatives, and be better prepared for possible changes.

Here we put forward a serial, partially-based mediation model in which transformational CEOs help to build a strategic capability - in our case, the organizational capacity to adapt - through the development of a behaviorally integrated TMT that engages in a high level of strategic decision comprehensiveness. Forbes (2007) noted that when executives have access to information, they are often able to use that information to differentiate between effective strategies and ineffective ones. Thus, positive TMT dynamics and supporting processes need to be in place so that both the availability of information and the willingness to share and analyze it will allow for strategic capacities to emerge and develop. We posit that transformational

leadership creates a work environment in which followers are motivated to cooperate with others (Shamir et al., 1993), a common mentality is shaped (Garcia-Morales et al., 2008), and communication networks for transfer of knowledge are strengthened (Senge, 1990; Slater and Naver, 1995). Specifically, CEO transformational leadership is exercised through TMT BI as an enabling mechanism and through SDC as a strategic decision process. Whereas BI enables TMTs to integrate knowledge and insights (Hambrick, 1998), SDC provides the process through which executive members develop a deeper understanding of the situation, consider multiple criteria to screen alternatives, and evaluate alternative courses of action (Miller, 2008), hence improving the organization's capacity to adapt to environmental changes. Thus:

*Hypothesis 3a: TMT behavioral integration is positively associated with the organizational capacity to adapt.*

*Hypothesis 3b: Strategic decision comprehensiveness is positively related to the organizational capacity to adapt.*

*Hypothesis 3c: There is a direct and indirect relationship (through TMT Strategic decision comprehensiveness) between TMT behavioral integration and the organizational capacity to adapt.*

## **METHOD**

### **Sample and data collection**

Small firms are defined as those having fewer than 250 employees and less than \$7 million in annual revenue (United States Small Business Administration (SBA), 2006). Based on the Katila et al. (2012) definition, we characterize entrepreneurial firms as those starting from weak market and resource positions. The firms in our sample were all seeking additional financial capital, either to strengthen their cash flow (for a wide variety of reasons) or for

investments (mainly growth capital). Either way, these firms were clearly lacking in resources (i.e., in a weak resource position), and being relatively small, could be considered to occupy a weak market position. Certainly none of them were market leaders.

For these reasons, the CEO and several other members of the TMT of a random sample of 324 firms that applied for a loan from Israel's SME Fund were asked to participate in a survey about their firm's characteristics, activities and decisions. Israel's SMEs Fund is a government-backed institution that supplies bank loans to small and medium-sized businesses in Israel that are likely to repay their debt. Firms wanting to receive loans through the fund are required to supply detailed financial information and are interviewed and analyzed in the process. CEOs and their TMT members were told when contacted that the questionnaire data were being collected as part of a research project on the role of decision-making processes in small firms. Common research methods were used to identify the individuals making up the firm's TMT (e.g., Castanias and Helfat, 1991; Hambrick and Mason, 1984). The CEOs were only asked to identify the TMT members they consulted in the strategic decision-making process, and their assistance was sought in recruiting these TMT members for the study. The CEO and the TMT members were then asked to complete a structured questionnaire and return it to the author (in person, by email, or by fax). Overall, complete data were received from 46% of the targeted firms. As in previous studies (e.g., Lubatkin et al., 2006), firms in which the response rate of the TMT members was below 50% were excluded from analysis (note that the TMTs in the sample were typically small - usually between two and four executives). Completed questionnaires were obtained from 149 firms, supplied by 149 CEOs and 216 other TMT members. Eighty-two firms provided responses from two TMT members (the CEO and another TMT member), whereas 67 firms had three TMT members responding (the CEO and two additional executives). The firms

in our sample had an average of 46 employees (note that 79% had fewer than 31 with a relationally small TMT). Participating organizations operated in diverse industries including construction, manufacturing, wholesale trade, services and others. There were no significant differences between participating and nonparticipating firms in terms of size as measured by the number of employees, or between early and late respondents in terms of any of the key variables (on this issue see Armstrong and Overton, 1977). The average tenure of respondents in the organizations (CEOs and TMT members) was 15 years. Twenty-seven percent of the responding TMT members were females.

To minimize potential response bias associated with data collection from a single source, data were obtained as follows: the CEO and his/her TMT members provided data on TMT SDC, BI, organizational capacity to adapt, and the relevant decision types. Data on demographic attributes and firm characteristics were provided by each respondent and compared to the data collected from the firm's official application to the SME fund. Family ownership level was provided by the CEO. Transformational leadership measures were provided by the TMT members (we excluded the CEO's self-reporting).

Most of the items in the questionnaires (which were sent to the respondents in Hebrew) were originally developed (in English) by previous researchers (see below). We used a translation of a questionnaire employed by Carmeli et al. (2013) and followed Brislin's (1986) guidelines for translation and back-translation to ensure construct measurement validation. Finally, we asked management scholars and senior executives in various organizations to review the questionnaire to confirm that the questions were indeed clear and reflected the constructs they were intended to measure.

## **Measures**

***CEO transformational Leadership.*** We used a measure described in Rafferty and Griffin (2004) to assess transformational leadership behaviors of the CEOs in the study, such as how the leader fosters group goals and supports the team. Respondents were asked to indicate the extent to which they agreed with various statements. For example, one such item read: “The CEO encourages TMT members to see changing environments as situations full of opportunities.” The Cronbach alpha for this measure was .94.

***TMT behavioral integration.*** Behavioral integration was assessed through an adapted version of an index developed by Simsek et al. (2005) consisting of items measuring three dimensions: information exchange, collaborative behavior and joint decision-making. Respondents were asked to indicate the extent to which they agreed with various statements. One such item read: “Team members have a clear understanding of the joint problems and needs of other team members.” The Cronbach alphas for information sharing, collaborative behaviors and joint decision making (.91, .94, and .92, respectively) were assessed first. Next, they were combined to create three manifest indicators by averaging each set of three items constituting each dimension. The Cronbach alpha for this measure was .90.

***TMT strategic decision comprehensiveness.*** We employed the measure of strategic decision comprehensiveness developed by Miller (2008). Team members were asked to indicate the extent to which strategic decision-making in their organization was comprehensive by expressing their agreement with items such as “When making significant decisions, the management performs a thorough analysis and testing and compares several alternatives.” The Cronbach alpha for this measure was .91.

***Organizational capacity to adapt.*** We employed the perceived organizational capacity to adapt scale developed by Carmeli and Sheaffer (2008). This measure examines dynamics and



turbulence in the sector in which the organization is active and examines the organization's willingness to make material changes in response to its changing environment. Adaptability thus encompasses financial, social, environmental, and ethical considerations required for organizational survival in today's competitive environment. Respondents were asked to indicate the extent to which they agreed with items such as "Our organization is willing to make material changes (e.g., strategic changes or the addition of a new and significant product) as required by the competitive environment in which we operate." The Cronbach alpha for this measure was .94.

***Control variables.*** Organizational size (represented by number of employees), industry type (indicated by the three-digit North American Industry Classification System, NAICS, code level), and TMT attributes and diversity (e.g., education, gender, tenure and functional diversity, etc.) were used as control variables. Since most firms in the sample were family businesses, the level of family ownership was controlled for using the percentage of the business owned by members of the founding/controlling family (Chua et al., 1999).

### **Level of Analysis**

Multiple informants have been shown to be more reliable than a single respondent in strategy research (Bowman and Ambrosini, 1997), but using such data requires the assessment of within-team consistency. Before aggregating the scores from each team member, including the CEO, a one way analysis of variance was run on each item using firm affiliation as the independent variable to determine whether there was greater variability in the ratings between organizations than within organizations (Winer, 1971). The F ratio was significant ( $p < .001$ ) for each model item, supporting aggregation.

A one-way analysis of variance (James, 1982; Smith et al., 1994) was conducted to verify greater variability in the ratings between teams than within teams ( $p < .01$ ). The inter-rater agreement index values (Rwg) and intra-class correlations (ICCs) were calculated to assess group member agreement and consistency. ICC(1) indicates the extent of agreement among ratings from members of the same group, while ICC(2) indicates whether groups may be differentiated based on the variables of interest. The ICC(1) and ICC(2) values for transformational leadership were between .29 and .85 for ICC(1) and between .38 and .89 for ICC(2) (mean rwg=.81). The ICC(1) and ICC(2) values for TMT behavioral integration were between .42 and .80 (ICC(1)) and between .64 and .91 (ICC(2)) (mean rwg=.80). For strategic decision comprehensiveness these measures were between .56 and .78 (ICC(1)) and between .76 and .90 (ICC(2)) (mean rwg =.89). Finally, the values of ICC(1) and ICC(2) for organizational capacity to adapt were between .49 and .56 (ICC(1)) and between .70 and .75 (ICC(2)) (mean rwg=.87). All these values exceeded conventional standards for aggregating individual questionnaire responses for team level analysis in field research (Bliese, 2000).

### **Analytical Strategy**

Latent variable structural equation modeling (SEM) using Mplus 7.11 (Muthén and Muthén, 1998-2013) was used to test the model. First, a confirmatory factor measurement model was employed to verify that the indicators reflected their intended latent variables. Using all of the survey items as indicators would have resulted in an exceedingly large number of parameters relative to the sample size. Thus, parcels of several survey items were used as indicators for some of the latent variables. Parcels are frequently used in SEM. They have the advantage of providing more reliable indicators than individual items, requiring the estimation of fewer parameters (Rindskopf and Rose, 1988; Marsh et al., 1989; Hull et al., 1995) They also produce

larger point estimates of path coefficients compared to path analysis (Coffman and MacCallum, 2005). Their use here seemed appropriate as the primary focus was on the links between the latent variables rather than the attributes of individual survey items (Graves et al., 2013; Landis et al., 2000; Little et al., 2002).

Two manifest indicators, consisting of item parcels, were used for SDC and organizational capacity to adapt (transformational leadership and TMT behavioral integration were defined as second order factors). These manifest indicators were created by randomly assigning items from each primary factor scale to its two parcels.

## **RESULTS**

### **Preliminary Analyses**

We employ a two-step procedure to assess the model in Section 4.3 (denoted as the baseline model; see Figure 2). First, a CFA model in which latent constructs were identified was utilized, indicating which items measured which research variables. Second, a structural model was fitted in which the directional relationships between model constructs were specified. Further, an auxiliary model - which extended the baseline model (denoted as Model 1) by adding an additional path - was tested to exploit more information about the structural model that best accounted for the covariances between the model's exogenous and endogenous constructs (Anderson and Gerbing, 1988). Table 1 presents the second step of this analysis.

----Insert Table 1 about here----

Using confirmatory factor analysis (CFA), the hypothesized four-factor measurement model (including transformational leadership, BI, SDC and organizational capacity to adapt) was used to assess whether each of the measuring items was indeed significantly loaded by the scale

with which it was associated. Moreover, the results of the overall CFA showed acceptable fit with the data.

With a Chi-square value of 58.32 (37 degrees of freedom), the parsimony-adjusted goodness-of-fit statistics indicated an acceptable fit (CFI = .986; TLI = .979; RMSEA = .062; SRMR = .026). Standardized coefficients from factors to items ranged from .82 to .99. In addition, the results for the CFA indicated that all relationships between the indicator variables and their corresponding latent variables were highly significant ( $p < .000$ ).

In an attempt to clarify the factor structure, we examined three alternative measurement models. First, a three-factor model was specified where the observed items of both TMT behavioral integration and organizational capacity to adapt were loaded onto one latent factor, and the observed items of transformational leadership and SDC were each loaded onto different latent factors. The results of this three-factor model generated the following fit indices: a Chi-square of 164.724 with 40 degrees of freedom, and CFI = .918; TLI = .887; RMSEA = .145; SRMR: .064. Thus, the model's goodness of fit deteriorated with RMSEA above cutoff (Hu and Bentler, 1999) and produced a poorly fitting model ( $>0.08$ ) and a TLI below .90. Then, a two-factor model was specified where the observed items of both TMT behavioral integration and organizational capacity to adapt were loaded onto one latent factor and the observed items of transformational leadership and SDC collapsed onto one latent factor. The results of this two-factor model generated the following fit indices: a Chi-square of 293.6 with 42 degrees of freedom, and CFI = .834; TLI = .783; RMSEA = .201; SRMR: .09. Again, the model's goodness of fit deteriorated even more, with a RMSEA above cutoff for a poorly fitting model ( $>0.08$ ) and TLI below .90. Finally, a one-factor model was tested. In this model, all the observed items loaded onto the same latent variable. This model was expected to assess the extent of common

method variance overall. The results of the one-factor model yielded the following fit indices: a Chi-square of 501.55 with 43 degrees of freedom, and CFI = .698; TLI = .614; RMSEA = .268; SRMR: .106. In sum, the three-factor, two-factor, and one-factor models showed relatively poor fit compared to the hypothesized four-factor model which featured good fit with the data.

To test whether the data could have been affected by multicollinearity, we conducted a test for variance inflation factors (VIFs). Multicollinearity is said to exist when VIFs exceed the value of 10 (Belsley et al., 1980). The highest VIF in our model was estimated at 3.14 (for TMT behavioral integration), indicating that there was no problem of multicollinearity in the models.

### **Model Testing**

The findings in this study strongly supported the baseline model and our hypotheses. The model and its standardized coefficients are depicted in Figure 2. The means, standard deviations, and correlations among the variables are shown in Table 2. Specifically, Transformational leadership was significantly associated with BI ( $b = .45, p < .001$ ), where  $b$  was the estimated path coefficient, as was its association with SDC ( $b = .45, p < .001$ ). In turn, BI was significantly related to both SDC ( $b = .47, p < .001$ ) and organizational capacity to adapt ( $b = .39, p < .001$ ). SDC was significantly related to organizational capacity to adapt ( $b = .47, p < .001$ ). Finally, there were also a few significant relationships between some of the control variables and the independent and dependent variables: firm size had a positive impact on BI, whereas education level had a positive impact on BI and a marginally negative impact on the capacity to adapt. Educational diversity had a negative impact on BI and a marginally negative impact on SDC. Family ownership level had a marginally positive impact on the organizational capacity to adapt.

----Insert Figure 2 and Table 2 about here----

Bootstrap analyses similar to those of Shrout and Bolger (2002) were conducted to provide

additional significance tests on the indirect effects in the baseline model. Specifically, 10,000 bootstrap replications were used to calculate bias-corrected confidence intervals for the indirect effects of (1) Transformational leadership on capacity to adapt via BI and SDC, (2) Transformational leadership on SDC via BI, (3) Transformational leadership on capacity to adapt via SDC, and (4) BI on capacity to adapt via SDC. All the confidence intervals for the indirect effects only included positive values, indicating that the effects observed earlier were positive and significant ( $p < .05$ ).

## **DISCUSSION**

This paper developed and examined a sequential mediation model that links CEO transformational leadership to organizational capacity to adapt, through TMT behavioral integration (BI) and strategic decision comprehensiveness (SDC). The findings indicate that CEO transformational leadership facilitates micro-processes in TMTs that help foster SDC in the decision-making process and build strategic capabilities; specifically, the organizational capacity to adapt to a changing environment.

By delineating the process by which CEO transformational leadership influences processes within the TMT that underpin the building of strategic capabilities, we expand on behavioral strategy (Felin and Foss, 2005) and micro-foundations in the organizational and strategy literature (Barney and Felin, 2013). Our focus on BI allowed us to capture human interactions that can be viewed as “micro-foundations” of organizational processes (Argote and Ingram, 2000). Specifically, we view BI as comprised of micro-behavioral sources which in turn are “interactions of individuals, processes, and structures that contribute to the aggregation and emergence of the collective constructs” (Felin et al., 2012, p. 3) and is manifested as a strategic capability. This is vital for enhancing our understanding of how organizational systems are

created (Osborn, 1998) as we seek to delineate processual mechanisms by which leaders build strategic capabilities in small entrepreneurial firms.

Clarifying the contextual factors and processes that allow leaders to build and improve organizational capacity to adapt is important theoretically because it concerns long-standing questions that are central to the success of organizations (and small entrepreneurial firms in particular). Strategic decision processes of small entrepreneurial firms are critical to their growth and viability, because they allow such firms to create long-term societal and financial value. Comprehensiveness in the decision-making process facilitates a better understanding of how a firm's actions affect its environment, enabling a better response to the various needs and expectations of stakeholders. More adaptive firms may look beyond increasing short-term financial goals (which are often the focus of small firms) and utilize their comprehensive decision-making processes to develop a deeper, more nuanced understanding of environmental, ethical and social needs, as well as potential implications of the courses of action they pursue, by developing numerous alternatives and comparing them simultaneously. Incomprehensiveness in the decision-making processes may inhibit the ability of small entrepreneurial firms to process and interpret informational cues, thus hindering their capacity to adapt to emerging conditions in both the general and task landscapes.

This paper contributes to the growing body of work on transformational leadership (e.g., Bass, 1999; Ling et al., 2008; Graves et al., 2013) by informing leadership theory and research on the socio-cognitive mechanisms and processes through which this leadership is effectively exercised. Our research illustrates the influence that transformational CEOs can exert to cultivate a behaviorally integrated TMT and facilitate comprehensiveness in the strategic decision-making process utilized by a focal TMT. TMT BI and SDC were shown to increase adaptability, which is

crucial for the viability of small entrepreneurial firms. In so doing, we extend research that seeks to unravel TMT attributes and processes shaped and facilitated by transformational leaders in their pursuit of innovative, entrepreneurial and effective organizations (Garcia-Morales et al., 2008; Ling et al., 2008).

A focus on small entrepreneurial firms is vital, considering the significant role these firms play in emerging and developed economies. Small firms constitute well over 90% of the world's enterprises (SBA, 2006; BERR, 2008; EC, 2013; ABS, 2001) and while many of them have weak market and resource positions they constitute a critical component and a major contributor to the strength of local economies as they present new employment opportunities and serve as building blocks for larger corporations (UN, 1999). Despite their relative importance, research on small entrepreneurial firms has been relatively underdeveloped, probably because data about their actions are not readily available. As small entrepreneurial firms lack the resources and hierarchical administrative systems that help larger firms operate, they have to rely more on the ability of their CEO and TMT members (Lubatkin et al., 2006; Ling et al., 2008). By demonstrating the importance of BI and SDC, this paper sheds light on how leaders of small entrepreneurial firms can overcome and perhaps even exploit such hurdles as the liability of smallness (Auster and Aldrich, 1986) to achieve a more adaptive capacity through micro socio-cognitive processes. This corroborates new theorizing about “resilience through smallness” and opens up new opportunities for research on the mechanisms that help develop it (Carmeli and Markman, 2011). We specifically extend research on micro-behavioral mechanisms that underpin SDC and adaptive capacity (Carmeli et al. , 2015; Hollnagel et al., 2006) in the context of small-sized firms (Lubatkin et al., 2006), thus helping to refine strategic leadership theory (Hambrick, 2007).



This research also contributes to the literature on strategic decision-making by highlighting the importance of SDC in TMTs for building adaptability. We underscore the notion of comprehensiveness in the decision-making process as a vehicle for greater vigilance, as it is “crucial to recognizing opportunities for growth and innovation and to finding the hidden dangers in a world of breathtaking change and complexity” (Day and Schoemaker, 2008, p. 51).

We advance research on the role of inclusiveness in decision-making processes (Forbes, 2007; Fredrickson and Mitchell, 1984) and in promoting organizational outcomes by unraveling how behavioral integration facilitates SDC. This engagement of SDC in the strategic decision-making processes of small entrepreneurial firms allows for a better understanding of emerging issues that are as yet ill-defined (Snizek, 1992), thus enhancing the capacity to adapt to environmental conditions and create a more effective organizational system.

### **IMPLICATIONS FOR PRACTICE**

The findings demonstrate the importance of transformational leadership among CEOs and owners of small entrepreneurial firms. For example, CEOs should be encouraged to promote organizational pride among their TMT members and employees. This can be achieved, for example, by talking positively about the organization. Moreover, CEOs should encourage their TMT members to see changing environments as potential opportunities and challenge them to take novel approaches to existing problems and assumptions. While some CEOs penalize innovative solutions or encourage safe and simplistic solutions (e.g., the old saying “nobody ever got fired for buying IBM” originates from corporate IT departments that often buy technically inferior software from well-known brands to satisfy management and thereby artificially reducing uncertainty and doubt), others encourage executives to rethink some of their basic assumptions. For example, a CEO in our sample openly acknowledged that managers are

bound to "err every once in a while and that will cost the company a lot of money" but reassured everyone that as far as he was concerned, this was "a worthy investment rather than money poorly spent" and thus encouraged his managers to act and simultaneously made them very proud to be part of such an advanced thinking organization. When evaluating possible alternatives, TMT members should be encouraged to consider various criteria including financial (both direct and indirect potential implications), ethical (including the effects of a strategic decision on the reputation of the organization as well as legal issues) and environmental concerns. For example, if the CEO shapes a company culture that wants to be 'green', executives are more likely to consider the environmental implications when confronted with a strategic dilemma. Finally, CEOs of small entrepreneurial firms should also consider TMT members' personal feelings before acting (particularly due to the small size of such teams and their intimate, family-like atmosphere), and acknowledge good performance.

Our model substantiates several links among BI, SDC and the capacity to adapt to a changing environment. Thus, TMT members should be encouraged to promote the building blocks of BI and SDC in their team cultures, including free exchange of extensive, high-quality information (quantity and quality), collaborative behaviors and greater emphasis on joint decision-making in the TMT. Practically, this may be done using a variety of tools, for example by conducting team meetings which include brainstorming and similar sessions. The TMT should face strategic decisions in a comprehensive manner, for example by establishing decision-targeted teams, consulting with experts and advisors when needed, or conducting thorough analyses and testing. Encouragement of TMT BI and SDC can help improve the adaptability of small entrepreneurial firms and may even promote their longevity and performance, which is

important because it suggests that it may be possible to reverse small entrepreneurial firms' decline by adopting leadership characteristics and emphasizing BI and SDC.

### **LIMITATIONS AND FUTURE DIRECTIONS**

This study has several limitations. First, the data were cross-sectional. Hence, causal inferences should be made with caution, since the observed relationships may well be susceptible to reverse causality. Future research should attempt to collect data at several points in time to infer causality.

Second, due to the contextual settings of the research which was centered on small entrepreneurial firms in Israel, generalization of the results may potentially require an extension of the analysis of the constructs to other settings, countries, and cultures as well as among larger, potentially public companies. Furthermore, in comparison to TMTs of larger companies, those of small entrepreneurial firms have only a handful of top executives, and without a layered hierarchy, these managers are in close contact with the transformational leader. Larger TMTs may include members who are less influenced by the CEO and have less day-to-day contact with him or her, thus experiencing the leadership type in a substantially different fashion. Further research is needed to better understand how CEOs shape contexts within TMTs and their organizations. In the context of decision-making processes among managers, additional research is needed to investigate the effect of leaders on the facilitation of decision-making processes, for example through recruitment practices of TMT members and the effects of these practices on team dynamics.

A subjective (rather than objective) measure of capacity to adapt was used in this study. A split-sample method reduce common method variance by using an alternating half of the respondents from each group to calculate the means of the variables would not have allowed us

to capture the members' shared perception of the capacity to adapt, which is akin to conceptualizing adaptive capacity outcome as a composition construct (see Kozlowski & Klein, 2000). Our operationalization is also consistent with research that has directly assessed the capacity to adapt using subjective assessment (Carmeli, Jones, and Binyamin, 2015). Nevertheless, we encourage caution while interpreting the findings. Finally, assessing the importance of the organizational capacity to adapt (firm performance, for example) requires further investigation in additional settings and organizational situations. This type of assessment may be vital, for example, in firms that have experienced great success as compared to failed firms. Effective firms are likely to be more extensively engaged in the learning and change processes that underpin their capacity to adapt. Furthermore, the organizational capacity to adapt is highly linked to resilience, a central capacity for any organization (Sutcliffe and Vogus, 2003; Carmeli and Markman, 2011) and future research is needed to assess, for example, the connections between the influence of the CEO and TMT behavioral integration and organizational resilience in times of change.

## **CONCLUSION**

This paper contributes to a better understanding of the ways transformational CEOs shape the micro-foundations of strategic capabilities. Our research expands and informs research and theory on strategic leadership, micro-processes within TMTs, strategic decision-making, and strategic capability in the context of small entrepreneurial firms. We view behavioral integration and comprehensiveness in the strategic decision-making of TMTs as socio-psychological vehicles for cultivating adaptability that contribute to building effective organizational systems in small entrepreneurial firms.

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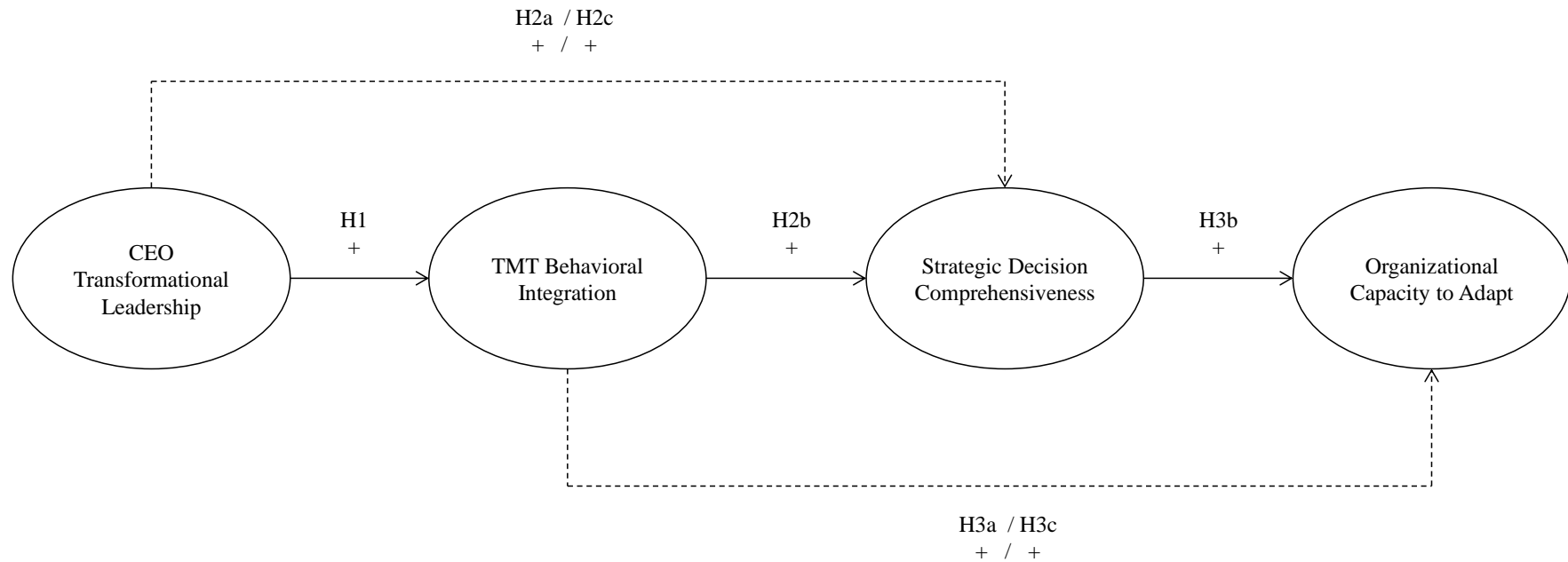
Table 1: Comparisons and Path Coefficient of Structural Equation Models<sup>a</sup>

Model	Path Coefficient / Fit indices	Model	Path Coefficient / Fit indices
<i>Baseline Model:</i>		<i>Model 1:</i>	
CEO Transformational leadership → TMT behavioral integration	.45***	CEO Transformational leadership → TMT behavioral integration	.45***
CEO Transformational leadership → Strategic decision comprehensiveness	.45***	CEO Transformational leadership → Strategic decision comprehensiveness	.44***
TMT behavioral integration → Strategic decision comprehensiveness	.47***	TMT behavioral integration → Strategic decision comprehensiveness	.48***
TMT behavioral integration → Organizational Capacity to Adapt	.39***	TMT behavioral integration → Organizational Capacity to Adapt	.33**
Strategic decision comprehensiveness → Organizational Capacity to Adapt	.47***	Strategic decision comprehensiveness → Organizational Capacity to Adapt	.40***
		CEO Transformational leadership → Organizational Capacity to Adapt	.15 ( $p=.01$ )
$\chi^2$	204.549	$\chi^2$	202.00
df	118	df	117
		$\Delta\chi^2$	2.549
RMSEA	.070	RMSEA	0.70
CFI	.949	CFI	.950
TLI	.928	TLI	.929
SRMR	.09	SRMR	.089
AIC	2258.379	AIC	2257.835
BIC	2465.651	BIC	2468.111

<sup>a</sup> In all models the control variables (industry type, firm size, TMT attributes (education, tenure), TMT diversity (educational, gender, functional), Family ownership (percent of the business owned by members of the founding / controlling family) were linked to Organizational Capacity to Adapt. Most of these links were non-significant. We also found that competitive landscape did not significantly moderate the relationship between SDC and Capacity to Adapt ( $p=.85$ ).

\*  $p < .05$ , \*\*  $p < .01$

Figure 1: The hypothesized Research Model



*Note.* The dotted lines indicate direct and indirect relationships.

Hypothesis 1: CEO transformational leadership is positively associated with TMT behavioral integration.

Hypothesis 2a: There is a positive relationship between CEO Transformational leadership and strategic decision comprehensiveness.

Hypothesis 2b: There is a positive relationship between TMT behavioral integration and strategic decision comprehensiveness.

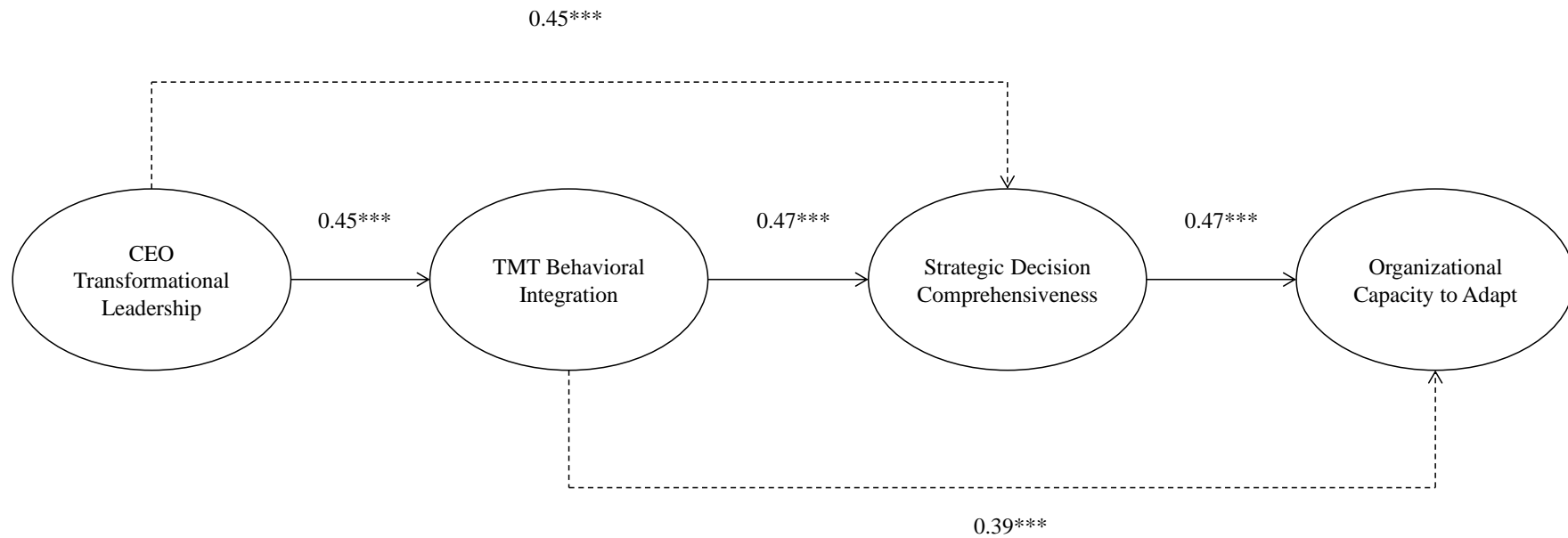
Hypothesis 2c: There is a direct and indirect relationship (through TMT behavioral integration) between CEO Transformational leadership and strategic decision comprehensiveness.

Hypothesis 3a: TMT behavioral integration is positively associated with organizational capacity to adapt.

Hypothesis 3b: Strategic decision comprehensiveness is positively related to organizational capacity to adapt.

Hypothesis 3c: There is a direct and indirect relationship (through TMT Strategic decision comprehensiveness) between TMT behavioral integration and the organizational capacity to adapt.

Figure 2: The Relationships between CEO Transformational Leadership, Behavioral Integration, Strategic Decision Comprehensiveness, and Organizational Capacity to Adapt



*Note.* Ovals indicate latent variables. Statistics are standardized parameter estimates. Indicators (items) and correlations between residual errors (between two items of Transformational leadership) are not shown. Control variables included firm size, industry type, TMT attributes, diversity and family ownership. \*\*\*  $p < .001$ .

Table 2: Means, Standard Deviations (s.d.), and Correlations

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. <i>Organizational Capacity to Adapt</i>	3.61	0.59	(.94)													
2. <i>Strategic decision comprehensiveness</i>	3.13	0.62	0.59***	(.91)												
3. <i>Transformational leadership</i>	3.58	0.75	0.53***	0.62***	(.94)											
4. <i>Behavioral integration</i>	3.36	0.87	0.63***	0.48***	0.53***	(.91)										
5. <i>Firm size</i>	46.15	69.62	0.18*	-0.10	-0.20*	0.24**	--									
6. <i>Diversity of education - years studied</i>	13.92	1.57	0.10	0.24**	0.15	0.12	-0.02	--								
7. <i>Diversity of Educational level</i>	0.34	0.27	-0.17*	-0.05	-0.24***	-0.39***	0.16*	0.28***	--							
8. <i>Diversity of gender</i>	0.28	0.23	-0.16*	0.01	-0.07	-0.27***	-0.13	0.057	0.27***	--						
9. <i>TMT functional diversity</i>	0.34	0.22	0.04	0.13	0.001	-0.13	0.03	0.21***	0.32***	0.33***	--					
10. <i>TMT organizational tenure</i>	10.88	6.96	-0.096	-0.08	-0.09	-0.05	-0.24***	-0.25***	-0.26**	-0.08	0.10	--				
11. <i>Construction industry</i> <sup>a</sup>	0.14	0.34	0.01	0.07	0.10	0.10	-0.17*	-0.15	-0.29***	-0.17*	-0.22**	0.06	--			
12. <i>Manufacturing industry</i> <sup>a</sup>	0.30	0.46	-0.40***	-0.20*	-0.29***	-0.58***	-0.21**	-0.02	0.37***	0.32***	0.19*	0.18*	-0.27***	--		
13. <i>Wholesale Trade industry</i> <sup>a</sup>	0.18	0.38	0.16*	0.12	0.14	0.12	-0.20*	0.11	-0.10	-0.001	0.11	0.03	-0.19*	-0.31***	--	
14. <i>Family ownership</i>	0.98	0.10	0.03	-0.14	-0.18*	-0.10	0.07	-0.17*	-0.02	-0.01	0.10	0.17*	0.07	-0.05	-0.11	--

N = 149 all tests are two-tailed

Reliabilities are in parentheses on the diagonal.

<sup>a</sup> Coded as a dummy variable.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$